

REMARKS

Applicants have considered the outstanding official action. It is respectfully submitted that the application is directed to patentable subject matter and in condition for allowance as set forth below.

The disclosure is objected to because of informalities including use of legal phraseology and the form of the abstract. The informalities noted by the Examiner have been corrected as shown by the attached substitute specification showing the corrections and a clean version of the substitute specification. The section of the specification entitled "Summary" has been deleted from the end of the specification and inserted into the substitute specification in an appropriate position. Additionally, the abstract in the substitute specification is the abstract listed on the face of International Publication No. WO 2004/002220 A1. No new matter has been added. Accordingly, withdrawal of the objection is respectfully requested.

Claim 4 is objected to based on the limitation "said buoy" in line 4 having insufficient antecedent basis. Applicants have amended claim 4 to overcome this objection. Withdrawal of the objection is respectfully requested.

Claims 3 and 4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,653,193

(Marissal) in view of U.S. Patent No. 4,257,350 (Streichenberger) and further in view of U.S. Patent No. 6,431,107 (Byle) and further in view of U.S. Patent No. 5,412,903 (Zemach).

Claim 3 is the sole independent claim in the application. Claim 3 claims a submersible shellfish farm comprising at least one line of cables bearing spaced culture ropes. The at least one line is suspended horizontally from two end floats which support the at least one line in association with intermediate support buoys and is further anchored by concrete dead weights positioned at each end of the at least one line. The at least one line of cables is submersible and is elevated from a sea floor while guided by vertical movement of the two end floats when the two end floats are submerged. The two end floats are submerged or raised based on inner volume of the floats being variable by filling or draining of the inner volume of water or air and the end floats are connected to a surface buoy including an air intake valve. The two end floats are connected to the concrete dead weights by an anchoring system which maintains tension on the at least one line of cables.

Marissal teaches a device for growing mollusks, in particular oysters, which incorporates at least one element constituting a tray (30) for carrying the mollusks that is

disposed within a net (24) of tubular shape and adapted to be suspended from a hawser anchored in the sea. The tray element (30) includes on its periphery a flange (42) extending generally in a direction perpendicular to the plane of the tray. The tray further includes a separate clamping element (32) for clamping the net against the flange (42).

Marissal, accordingly, teaches a different structure from applicants' claimed structure. In particular, among other things but as acknowledged by the Examiner, Marissal does not disclose (1) concrete dead weights, (2) two end floats being submerged or raised based on inner volume of the floats being variable and being connected to a surface buoy including an air intake valve, and (3) the use of an anchoring system as claimed. However, the Examiner relies on Byle, Streichenberger and Zemach in combination with Marissal to reject claims 3 and 4 under 35 U.S.C. § 103.

Byle teaches a floating offshore structure having a buoyant hull with sufficient fixed ballast to place the center of gravity of the floating structure below the center of the buoyancy of the hull. A support structure coupled to an upper end of the hull supports and elevates the superstructure above the water surface. A soft tendon is attached between the hull and the sea floor. The vertical

stiffness of the soft tendon results in the floating structure having a heavy natural period of at least twenty seconds. The Examiner relies on Byle for the isolated teaching that with respect to solid fixed ballast, concrete is an equivalent structure to pig iron. Byle, however, is not relied on for any other teaching and applicants submit that Byle does not make up for the shortcomings of Marissal as set forth above. Byle does not disclose fixed ballast of concrete or pig iron in a submersible farm structure as claimed, or two end floats being submerged or raised based on inner volume of the floats being variable and being connected to a surface buoy including an air intake valve, or the use of an anchoring system as claimed. Neither Marissal nor Byle suggest any motivation to modify the teachings of Marissal or Byle in order to provide the claimed shellfish farm.

Streichenberger teaches a method and device for practicing aquiculture in the open sea which includes a bow net means of rigid construction having means permitting it to float in a partially submerged condition or fully immersed in the water without touching the bottom of the sea. The bow net means includes constant-buoyancy tanks and variable-buoyancy tanks, the latter being adapted to be filled with either air or water in order to control the

submersion level of the bow net. The Examiner relies on Streichenberger for the isolated teaching of floats (31) being submerged and raised based on an inner volume of the float being variable and being connected to a surface buoy (7) including an air intake valve for adjusting the depth of the aquatic device dependent upon the expected weather conditions. Streichenberger, however, does not make up for the shortcomings of Marissal as set forth above. Streichenberger does not disclose concrete dead weights or an anchoring system as claimed. Applicants respectfully submit it would not have been obvious to one of ordinary skill in the art to use the variable depth floats as taught by Streichenberger with the device of Marissal in order to provide a device which can be lowered in the water to minimize damage to the structure during rough weather. The hanging trays of Marissal disposed in tubular netting or lanterns are taught for submersion in the water from a hawser. Thus, the oysters being cultured are contained in closed spaces (see Col. 4, lines 44-45) which protect the oysters. No need therefore is recognized in Marissal for adjusting the submersion level of the culturing containers based on weather. Accordingly, it would not have been obvious to one skilled in the art to use the variable depth floats as taught by Streichenberger with the device of Marissal to provide the claimed shellfish farm without

knowledge of applicants' invention. Neither Marissal nor Streichenberger suggest any motivation to modify the teachings of Marissal or Streichenberger in order to provide the claimed shellfish farm.

Zemach is relied on by the Examiner for the prior art teaching shown in Figures 1a and 1b and described at Col. 2, lines 6-29. The prior art described teaches a fish cage and mooring system. The mooring system includes a large mooring anchor 11 through which a cable 12 is led to a crown buoy 14 and second mooring anchor 16. Tension is maintained on cable 12 by the buoyancy of crown buoy 14 to control the submersion of the fish cage. The buoyancy of buoy 14 is controlled by the amount of water contained in two chambers of the buoy. Zemach states that this system is not desirable due to the large permanent mooring anchors and thus goes on to teach a fish cage and cables having a combined buoyancy which is such that at least a portion of the fish cage is normally located at or above the water surface. The cables are connected to a sinker whose weight is sufficient to overcome the combined buoyancy of the fish cage cables. The sinker is also connected to a second cable which is connected to a buoy which contains a winch for alternately shortening and lengthening the effective length of the second cable so as to alternately allow the fish cage to float or to submerge. The Examiner relies on Zemach to

teach the use of an anchoring system including dead weights for maintaining tension on a cable when a fish cage is lowered in the water during rough weather. Zemach, however, does not make up for the shortcomings of Marissal as set forth above, in particular, Zemach does not disclose two end floats being submerged or raised based on inner volume of the floats being variable and being connected to a surface buoy including an air intake valve as claimed. Zemach teaches away from the prior art device including permanent mooring anchors and, thus, one skilled in the art would not be motivated to make the combination as applied by the Examiner in absence of further teaching or suggestion to take isolated features from multiple references and combine them so as to achieve applicants' claimed structure. Applicants respectfully submit that it would not have been obvious to one of ordinary skill in the art to use the prior art anchoring system described in Zemach with the device of Marissal as modified by Streichenberger.

As such, Byle, Streichenberger and Zemach do not make up for the shortcomings of Marissal as set forth above. It would not have been obvious to one of ordinary skill in the art to combine isolated portions of Marissal, Byle, Streichenberger and Zemach in order to provide the claimed shellfish farm in view of the lack of teaching or suggestion therein. Marissal, Byle, Streichenberger and Zemach do not

suggest any motivation to modify the teachings of Marissal, Byle, Streichenberger or Zemach in order to provide the claimed shellfish farm as required under 35 U.S.C. § 103(a).

The rejection of the Examiner makes it clear that the Examiner is selecting select parts of the prior art disclosures based on applicants' own teaching. This is using improper hindsight. Thus, as the Court of Appeals for the Federal Circuit stated in In re Rouffet, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457 (Fed. Cir. 1998):

"As this court has stated, "virtually all [inventions] are combinations of old elements." *Environmental Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 698, 218 USPQ 865, 870 (Fed. Cir. 1983); see also *Richdel, Inc. v. Sunspool Corp.*, 714 F.2d 1573, 1579-80, 219 USPQ 8, 12 (Fed. Cir. 1983) ("Most, if not all, inventions are combinations and mostly of old elements."). Therefore an examiner may often find every element of a claimed invention in the prior art. If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention. Such an approach would be "an illogical and inappropriate process by which to determine patentability." *Sensonics, Inc. v. Aerasonic Corp.*, 81 F.3d 1566, 1570, 38 USPQ2d 1551, 1554 (Fed. Cir. 1996).

To prevent the use of hindsight based on the invention to defeat patentability of the invention, this court requires the examiner to

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show a motivation to combine the references that create the case of obviousness. In other words, the examiner must show reasons that the skilled artisan, confronted with the same problems as the inventor and with no knowledge of the claimed invention, would select the elements from the cited prior art references for combination in the manner claimed."

In the case at hand, there is no motivation to select the parts of the multiple individual references selected by the Examiner to meet the appealed claims for the reasons stated above.

Applicants respectfully request withdrawal of the § 103 rejection.

Favorable consideration of the application is requested.

Respectfully submitted,

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Attachments - Substitute Specification (Marked Up Version)
- Substitute Specification (Clean Version)